

for example, if the current reference point was **754**, the current slope would be different than the prior slope, indicating a curve had been generated. Thus, at block **734**, the current reference point may be shifted in position to the end of the curve in the direction of the next reference point. In **FIG. 24**, for example, if reference point **754** was the current reference point, the position of reference point **754** would be shifted to location **755**. Then, control may pass to block **736**.

[0134] At block **736**, it may be determined whether the current slope is the same as the next slope. If yes, control may pass to block **738**. At block **738**, two triangles may be generated from the current reference point to the next reference point to form a segment of the payline between the two reference points. In particular, the two triangles may form a segment having the payline width (which may be defined at block **702**, **FIG. 21**). Control may then pass to block **744**.

[0135] If at block **736**, it was determined that the current slope is not the same as the next slope, control may pass to block **740**.

[0136] At block **740**, a curve in the payline may be formed. For instance, the curve may be formed using a plurality of triangles. In **FIG. 24**, for example, a curve about reference point **754** is generated with five triangles **768**, **770**, **772**, **774**, **776**. Parameters for generating the curve may be defined previous to executing block **740**. Such parameters may include, for example, a curve radius, a number of polygons to be included in the curve. Such parameters may be defined, for example, at block **702**, of **FIG. 21**. Any number of techniques for generating curves can be used, including those known to those of ordinary skill in the art of graphics processing. One example of a method for generating a curve will be described subsequently with reference to **FIG. 23**. Then, control may pass to block **742**.

[0137] At block **742**, two triangles may be generated from the current reference point to the beginning of the curve generated at block **740**, to form a segment of the payline between the two reference points. In particular, the two triangles may form a segment having the payline width (which may be defined at block **702**, **FIG. 21**). In **FIG. 24**, for example, the two triangles **760** and **762** form a payline segment from reference point **752** to the beginning of the curve about reference point **754**. Control may then pass to block **744**.

[0138] At block **744**, the current reference point may be set to the next reference point. In **FIG. 24**, for example, if reference point **752** was the current reference point, the current reference point may be set to reference point **754**. Additionally at block **744**, the prior slope may be set to the current slope. Similarly, the current slope may be set to the next slope. Then, control may pass to block **728**.

[0139] Although in the embodiment described above, the generated payline is a flat object in 3D model space, other types of paylines may be used. For example, the payline may have a thickness. Similarly, the payline may be cylindrical, have a triangular cross section, a hexagonal cross section, etc. Also, if slopes between different segments in the payline are different, a curve need not be generated (as in block **740**). Rather, the payline may include "sharp" vertices.

[0140] Additionally, although in the embodiment described above, the generated payline is located in one

plane in 3D model space, the payline could have a different structure. For example, one segment of the payline may lie in a first plane, and a second segment may lie in a second plane different than the first plane. In these embodiments, a location in the payline in which is to be generated may be determined, for example, by examining the direction of lines between reference points, gradients between reference points, etc. Also, the payline, or a portion thereof, may be curved in 3D model space, with a segment not lying in one plane. As a specific example, the payline, or a portion thereof, may have a helical structure.

[0141] Also, the payline need not reside "in front" of the game display. Referring to **FIG. 20**, for example, the payline generated could extend from the front of reel **672**, to the rear of reel **674**, and then to the front of reel **676**.

Curve Generation

[0142] **FIG. 23** is a flow diagram illustrating one embodiment of a method **740** for generating a curve in a payline. Method **740** will be described with reference to **FIG. 24**. At block **788**, a center of the curve radius is determined. The curve radius R may be previously defined, for example, at block **702** of **FIG. 21**. Additionally, the width W of the payline may be previously defined, for example, at block **702** of **FIG. 21**. In one embodiment, the center may be determined by calculating perpendicular distances from lines between the reference points of the payline. In **FIG. 24** for example, the center point **778** may be the point that is a perpendicular distance $R-W/2$ from the line between reference points **752** and **754**, and that also is the perpendicular distance $R-W/2$ from the line between reference points **754** and **756**.

[0143] At block **790**, a number of vertices on the "outside" of the curve may be determined. In one embodiment, the number of vertices can be determined based on a number of triangles that are to be included in the curve. The number K of triangles may be previously defined, for example, at block **702** of **FIG. 21**. For example, the number of vertices on the outside of the curve may be determined as $K/2$ rounded up to the nearest integer, plus 1. In **FIG. 24**, for example, the number K of triangles is five. Thus, the number of vertices on the outside of the curve is four ($5/2$ rounded up to 3 plus 1).

[0144] In other embodiments, the number of vertices may be previously defined, for example, at block **702** of **FIG. 21**. Additionally, the number of vertices may be determined by retrieving the number from a look up table based on the number K of triangles.

[0145] At block **792**, positions of the vertices on the outside of the curve may be determined. In one embodiment, a position of one vertex is determined as being a distance R from the center point on a line that is perpendicular to a line between the reference point about which the curve is being generated and the previous reference point. For example, in **FIG. 24**, vertex **779** is at a distance R from center point **778** on a line that is perpendicular to the line between reference points **752** and **754**.

[0146] In this embodiment, a position of another vertex is similarly determined as being a distance R from the center point on a line that is perpendicular to a line between the reference point about which the curve is being generated and